

AMENDMENTS TO THE CLAIMS

Claims 1-32 (Cancelled)

33. (Cancelled)

34. (Currently amended) The apparatus according to claim ~~33~~54, wherein said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

35. (Cancelled)

36. (Cancelled)

37. (Currently amended) ~~The apparatus according to claim 36,~~ An apparatus comprising:

a head;

a head support device including

(i) a support arm, with said head at one end of said support arm,

(ii) an elastic member near another end of said support arm, and

(iii) a first base arm,

with an end of said elastic member being fixed to said first base arm, and one of said support arm and said first base arm having a rotation supporting point;

a head slider on which said head is mounted, with said head slider being disposed at said one end of said support arm via a flexure; and

a balancer at said another end of said support arm such that said rotation supporting point is between said balancer and said head slider,

wherein said head slider has a length L_s in a direction of air flow from an air inflow end of said head slider to an air outflow end of said head slider and exhibits an immovable point when said head slider is rotated in a direction of pitch, such that when an external impact force is applied to said head slider, with a distance from an action

point of a load, that activates said head slider toward the recording medium, to the immovable point being L_o , $0.5 < L_o / L_s < 2$.

38. (Previously presented) The apparatus according to claim 37, wherein the immovable point is obtained from a ratio of rotational rigidity of an air layer, generated between a surface of said head slider and a recording medium when said head slider opposes the recording medium, to rotational rigidity with respect to vertical displacement of said head slider.

39. (Previously presented) The apparatus according to claim 37, wherein a center of gravity of said head slider corresponds to an action point of a negative force, when generated to activate said head slider toward a recording medium.

40. (Previously presented) The apparatus according to claim 37, wherein an equivalent mass of said head support device is less than a suction to be generated toward a recording medium on an air lubricated surface of said head slider.

41. (Currently amended) ~~The apparatus according to claim 36,~~ An apparatus comprising:

a head;

a head support device including

(i) a support arm, with said head at one end of said support arm,

(ii) an elastic member near another end of said support arm, and

(iii) a first base arm,

with an end of said elastic member being fixed to said first base arm, and

one of said support arm and said first base arm having a rotation supporting point;

a head slider on which said head is mounted, with said head slider being disposed at said one end of said support arm via a flexure; and

a balancer at said another end of said support arm such that said rotation supporting point is between said balancer and said head slider,

wherein said head slider has a length L_s in a direction of air flow from an air inflow end of said head slider to an air outflow end of said head slider, exhibits an immovable point when said head slider is rotated in a direction of pitch, and exhibits a pitch angle θ_p when said head slider is afloat over a surface of a recording medium whereby a distance X_t is defined between the surface of the recording medium and the air outflow end of said head slider, such that when an external impact force is applied to said head slider, with a distance from an action point of a load, that activates said head slider toward the recording medium, to the immovable point being L_o ,

$$1 \leq L_o / L_d \leq 2.5,$$

wherein $L_d = (L_s / 2) + (X_t / \tan(\theta_p))$.

42. (Previously presented) The apparatus according to claim 41, wherein the immovable point is obtained from a ratio of rotational rigidity of an air layer, generated between a surface of said head slider and a recording medium when said head slider opposes the recording medium, to rotational rigidity with respect to vertical displacement of said head slider.

43. (Previously presented) The apparatus according to claim 41, wherein an equivalent mass of said head support device is less than a suction to be generated toward a recording medium on an air lubricated surface of said head slider.

44. (Currently amended) ~~The apparatus according to claim 36,~~ An apparatus comprising:

a head;

a head support device including

(i) a support arm, with said head at one end of said support arm,

(ii) an elastic member near another end of said support arm, and

(iii) a first base arm,

with an end of said elastic member being fixed to said first base arm, and one of said support arm and said first base arm having a rotation supporting point;

a head slider on which said head is mounted, with said head slider being disposed at said one end of said support arm via a flexure;

a balancer at said another end of said support arm such that said rotation supporting point is between said balancer and said head slider;~~further comprising:~~

a positive pressure generating section on a surface of said head slider that is to oppose a recording medium, said positive pressure generating section including

(i) a first positive pressure generator spaced a predetermined distance from an air inflow end of said head slider, said first positive pressure generator being perpendicular to a direction of air flow to be created, and

(ii) a second positive pressure generator spaced a predetermined distance from an air outflow end of said head slider, said second positive pressure generator being at a widthwise center of said head slider and perpendicular to the direction of air flow to be created; and

a negative pressure generator between said first positive pressure generator and said second positive pressure generator, said negative pressure generator being formed so that a center of negative force, when generated to activate said head slider toward the recording medium, is positioned closer to said air outflow end of said head slider than to an action point of the negative force.

45. (Previously presented) The apparatus according to claim 44, further comprising:

a side rail on each widthwise side of said surface of said head slider, each said side rail being connected to said first positive pressure generator.

46. (Previously presented) The apparatus according to claim 45, wherein said negative pressure generator is adjacent an intermediate surface, with said intermediate surface being at a level that is between a level at which a surface of said negative pressure generator is located and a level at which a surface of said positive pressure generating section is located.

47. (Previously presented) The apparatus according to claim 44, wherein said negative pressure generator is adjacent an intermediate surface, with said intermediate surface being level that is between a level at which a surface of said negative pressure generator is located and a level at which a surface of said positive pressure generating section is located.

48. (Currently amended) The apparatus according to claim ~~33~~54, wherein said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and \sqsupset -shaped through-hole in said support arm so as to be tongue-shaped.

49. (Currently amended) The apparatus according to claim ~~33~~54, wherein said rotation supporting point includes two pivots.

50. (Previously presented) The apparatus according to claim 49, further comprising:
a head slider connected to said support arm via a flexure; and
a balancer on said support arm,
wherein said head is mounted on said head slider such that an overall center of gravity, which is a composite of respective centers of gravity of said head slider, said flexure, said support arm, and said balancer, is positioned on a line that interconnects respective peaks of said two pivots.

51. (Previously presented) The apparatus according to claim 49, wherein said two pivots are symmetrical with respect to a longitudinal center line of said support arm.

52. (Currently amended) The apparatus according to claim ~~33~~54, further comprising:
a side reinforcement at a longitudinal side of said support arm.

53. (Previously presented) The apparatus according to claim 52, wherein said side reinforcement is formed by bending a portion of said support arm.

54. (Currently amended) ~~The apparatus according to claim 33~~ An apparatus comprising:
a head; and
a head support device including
(i) a support arm, with said head at one end of said support arm,
(ii) an elastic member near another end of said support arm, and
(iii) a first base arm having a coupling portion at one end thereof,
wherein an end of said elastic member is fixed to said first base arm, and
one of said support arm and said first base arm has a rotation supporting point; wherein
~~said first base arm has a coupling portion at one end of thereof, and further~~
~~comprising:~~

a second base arm having a hole at one end thereof for receiving said coupling portion so as to fasten said first base arm to said second base arm;
a bearing portion; and
a driving device at another end of said second base arm.

55. (Cancelled)

56. (Currently amended) The apparatus according to claim ~~55~~61, wherein said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

57. (Currently amended) The apparatus according to claim ~~55~~61, wherein said head slider is disposed at said one end of said support arm via a flexure.

58. (Currently amended) The apparatus according to claim 5561, wherein said elastic member is symmetrical relative to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and \sqsupset -shaped through-hole in said support arm so as to be tongue-shaped.

59. (Currently amended) The apparatus according to claim 5561, wherein said rotation supporting point includes two pivots.

60. (Currently amended) The apparatus according to claim 5561, further comprising:
a side reinforcement at a longitudinal side of said support arm.

61. (Currently amended) ~~The apparatus according to claim 55~~An apparatus comprising:

a head on a surface of a head slider that is to oppose a recording medium; and
a head support device including

(i) a support arm, with said head at one end of said support arm,

(ii) an elastic member near another end of said support arm, and

(iii) a first base arm having a coupling portion at one end thereof,

wherein an end of said elastic member is fixed to said first base arm, and

one of said support arm and said first base arm has a rotation supporting point, and

wherein said head is spaced from said rotation supporting point in a longitudinal direction of said support arm; ~~wherein said first base arm has a coupling portion at one end thereof, and further comprising:~~

a second base arm having a hole at one end thereof for receiving said coupling portion so as to fasten said first base arm to said second base arm;

a bearing portion; and

a driving device at another end of said second base arm.

62. (Cancelled)

63. (Cancelled)

64. (New) The apparatus according to claim 41, wherein said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

65. (New) The apparatus according to claim 44, wherein said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

66. (New) The apparatus according to claim 37, wherein said elastic member is one-piece with said support arm and positioned along a longitudinal center line of said support arm.

67. (New) The apparatus according to claim 41, wherein said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and \sqsupset -shaped through-hole in said support arm so as to be tongue-shaped.

68. (New) The apparatus according to claim 44, wherein said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and \sqsupset -shaped through-hole in said support arm so as to be tongue-shaped.

69. (New) The apparatus according to claim 37, wherein said elastic member is symmetrical with respect to a longitudinal center line of said support arm, and is defined by one of a U-shaped, V-shaped and \sqsupset -shaped through-hole in said support arm so as to be tongue-shaped.